



75TH AIR BASE WING



---

# **Reducing Transportation Greenhouse Gases with Commuter Programs and Alternative Fuels**

2009 Environment, Energy and  
Sustainability Symposium and Exhibition

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>MAY 2009</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2009 to 00-00-2009</b>	
4. TITLE AND SUBTITLE <b>Reducing Transportation Greenhouse Gases with Commuter Programs and Alternative Fuels</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>75th Air Base Wing, 75ABW/CEG/CEVC, Hill AFB, UT, 84056</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the NDIA Environment, Energy Security &amp; Sustainability (E2S2) Symposium &amp; Exhibition held 4-7 May 2009 in Denver, CO.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>18</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

## 1. Hill AFB Background

## 2. Commuter Programs

- Challenges
- Transportation Incentive
- Vanpool
- Public Transit
- Benefits

## 3. Alternative Fuels

- Bio Diesel
- Ethanol
- Natural Gas
- Hydrogen

## 4. Lessons Learned and Take-Aways

# Hill AFB Background



## Air Logistics Center:

> 28,000 Employees



## Temperature Inversion— A Pollution Problem:

- > Unique geography and meteorology create inversions over Hill AFB
  - Mountain barrier with warm air aloft trapping cold air below
  - Corridor of north/south traffic along the Wasatch Front



# Commuter Programs



- > Local regulatory requirement “Employer-Based Trip Reduction Program”
- > Executive Order 13423 – Strengthening Federal Environmental, Energy, and Transportation Management



- > Partnered with local transit authority
- > 8,000 commuters to Hill AFB (typical day shift)



# Commuter Program Challenges



- > Increasing ridesharing and public transportation participation
  - Security
  - Cost
  - Schedules
  - Intra-base transportation
  - Awareness/availability
  - Sponsorship



# Commuter Program Transportation Incentive



## **UNITED STATES AIR FORCE OUTSIDE THE NATIONAL CAPITAL REGION PUBLIC TRANSPORTATION BENEFIT PROGRAM APPLICATION**

Purpose: Executive Order 13150 requires Federal agencies to establish transportation incentive program in order to reduce Federal employee's contribution to traffic congestion and air pollution and to expand their commuting alternatives. The purpose of the program is to encourage commuting by mass transportation and provide incentives to members/employee.



# Commuter Program Vanpool



- > Vanpool program growing since 2002
  - Over 130 vans leased from UTA
  - 12 and 15 passenger vans
  - Nearly 1,195 employees vanpooling
  - Program includes maintenance, insurance, fuel, six guaranteed trips/yr for emergency or overtime
  - Each vanpool has its own ground rules
    - > Time to meet/where
    - > Driver rotation/who sits where
    - > Radio/topics of conversation



# Commuter Program Public Transit



- > Commuter rail (Frontrunner) completed spring 2008
  - Nearest train station is 2 miles from the base
- > Discussions with local transit authority



# Commuter Program Benefits



*“Air Force is the largest single consumer of energy in the Federal Government and has assumed a GHG leadership role.” SAF/IEE memo 12 Feb 08*

- > Mission sustainability benefits of increasing ridesharing and use of public transportation
  - Safety: 25 times less likely to have a fatal traffic accident when riding public transit versus travel in a personal vehicle; ref NSC
  - Environment: reduces air pollutants contributing to smog and greenhouse gas emissions
  - Public relations: added benefit of reducing the number of cars on increasingly congested roads

## Reducing dependence on foreign oil by using alternative fuels:

- > Bio Diesel
- > Ethanol
- > Natural gas
- > Hydrogen

# Alternative Fuels: Bio Diesel



- > Available at Base service station
- > 2007 Energy Bill requires contains Bio Diesel carve-out
- > Cold weather gelling issues
  - > Mixed/treated to account for weather conditions (BQ 9000, ASTM D975)
  - > Use different feed stocks for cold weather
  - > Use 5% biodiesel and 95% diesel in cold weather
  - > Mix fuel 25 to 30 C above cloud point



Photo: USAF Infrastructure Energy Strategic Plan

# Alternative Fuels: Flex Fuel E85



- > Currently available from off-base service station
- > Efforts underway to revise the ethanol blend law
- > Corn and Cellulosic Ethanol
  - > In 20 years corn and cellulosic ethanol could produce 140 billion gallons per year (95% of current US transportation fuel supply)



Photo: USAF Infrastructure Energy Strategic Plan



# Alternative Fuels: Natural Gas



- > Base has fueling facilities for Natural Gas but few vehicles
- > United States has the 4<sup>th</sup> largest reserves in the World



# Alternative Fuels: Hydrogen



- Transition to hydrogen made easier in the future
  - NG engines can be converted to Hydrogen
  - NG transmission systems will work with Hydrogen





## Strategies to Increase Ridesharing and Use of Public Transportation:

- > Identify solutions for impediments to commuting
- > Engage local transit authority for joint solutions to maximize existing infrastructure
- > Communicate incentives and benefits

# Lessons Learned and Take-Aways

---



## Strategies to Increase Use of Alternative Fuels:

- > Diversify
- > Get to know your fuels people
- > Use Executive Order 13423 requirements in project funding requests



*75TH AIR BASE WING*

---

**EMAssist**

**Steve Rasmussen**

75ABW/CEG/CEVC

(801) 777-0359

[Steve.Rasmussen@hill.af.mil](mailto:Steve.Rasmussen@hill.af.mil)

**David Hansell**

EM-Assist, Inc.

(801) 775-6902

[DHansell@EM-Assist.com](mailto:DHansell@EM-Assist.com)